

Virginia Drought Assessment and Response Plan

<http://www.deq.virginia.gov/>

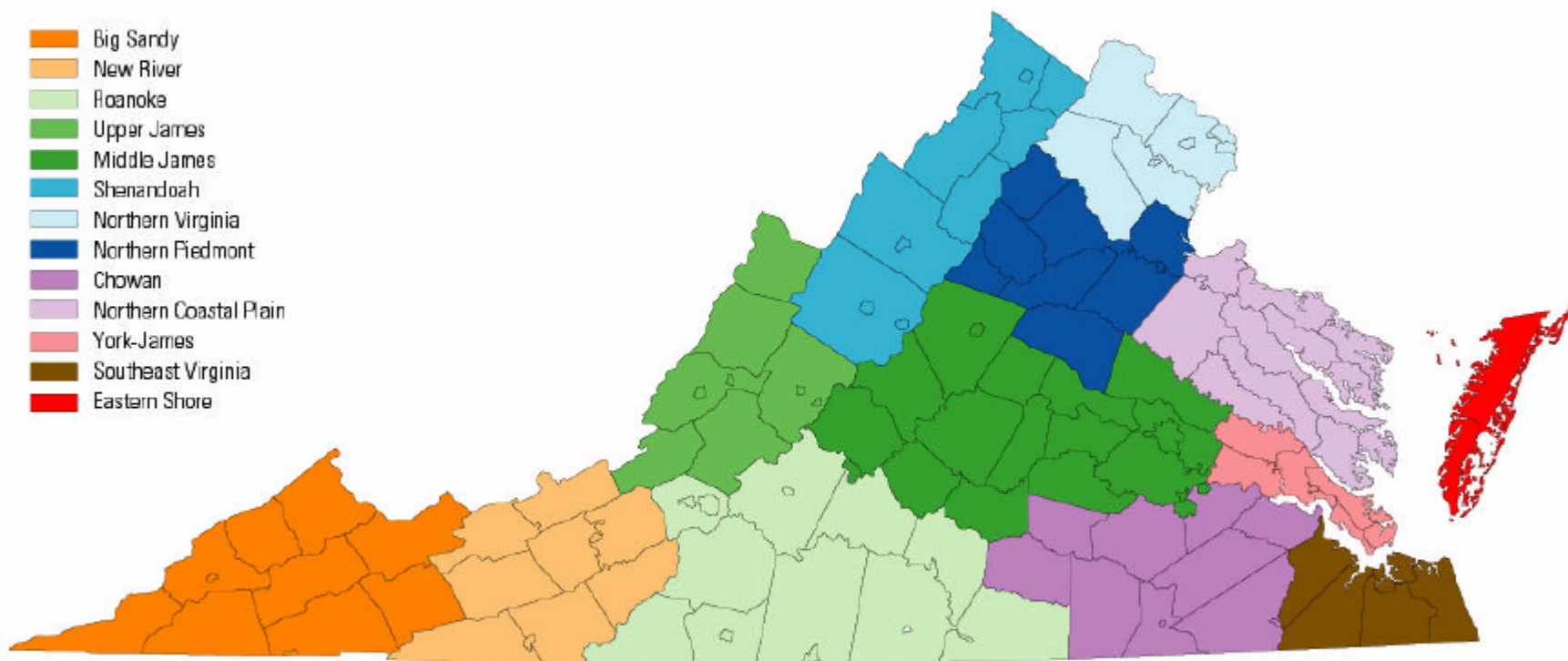
“What’s New at DEQ”

- Mid-Atlantic Car Wash Association
- National Spa and Pool Institute
- Virginia Rural Water Association
- Virginia Agribusiness Council
- Virginia Green Industry Council
- Virginia Golf Course Superintendent's Association
- Virginia Association of Counties
- Virginia Section of the American Water Works Association
- Virginia Municipal League
- Virginia Sports Turf Manager's Association
- Virginia Hospitality and Travel Association
- Virginia Water Well Association
- Virginia Manufacturer's Association
- Virginia Farm Bureau
- Southern Environmental Law Center
- Roanoke River Landowner's Association
- Virginia Irrigation Association
- City of Portsmouth
- Henrico County
- Town of Orange
- U.S. Navy
- U.S. Army Corp of Engineers
- Virginia Department of Environmental Quality
- Virginia Department of Emergency Management
- Virginia Department of Health
- Virginia Cooperative Extension Service
- Virginia Department of Game and Inland Fisheries
- Virginia Department of Agriculture and Consumer Services
- Virginia State Climatology Office
- Virginia Department of Forestry
- U.S. Geological Survey
- U.S. Department of Agriculture, Farm Services Agency
- National Oceanic and Atmospheric Administration, National Weather Service

Virginia Drought Monitoring Task Force

- VA Department of Environmental Quality
- VA Department of Health
- VA Department of Forestry
- VA Department of Emergency Management
- VA Department of Game and Inland Fisheries
- VA Department of Agriculture
- VA Cooperative Extension
- US Department of Agriculture
- US Geological Survey
- National Weather Service

State of Virginia Drought Evaluation Regions



Drought Indicators

- Precipitation Deficits
- Streamflows
- Ground water levels
- Reservoir storage
- Other indicators (Standardized Precipitation Index, Palmer Drought Severity Index, Crop Moisture Index, Keetch-Byrum Drought Index, and NOAA monthly and seasonal precipitation outlooks)

Precipitation Deficits

Months Analyzed	Normal (% of Normal Precipitation)	Watch (% of Normal Precipitation)	Warning (% of Normal Precipitation)	Emergency (% of Normal Precipitation)
October-December	>75.0	<75.0	<65.0	<55.0
October-January	>80.0	<80.0	<70.0	<60.0
October-February	>80.0	<80.0	<70.0	<60.0
October-March	>80.0	<80.0	<70.0	<60.0
October-April	>81.5	<81.5	<71.5	<61.5
October-May	>82.5	<82.5	<72.5	<62.5
October-June	>83.5	<83.5	<73.5	<63.5
October-July	>85.0	<85.0	<75.0	<65.0
October-August	>85.0	<85.0	<75.0	<65.0
October – September (and previous 12 months)	>85.0	<85.0	<75.0	<65.0

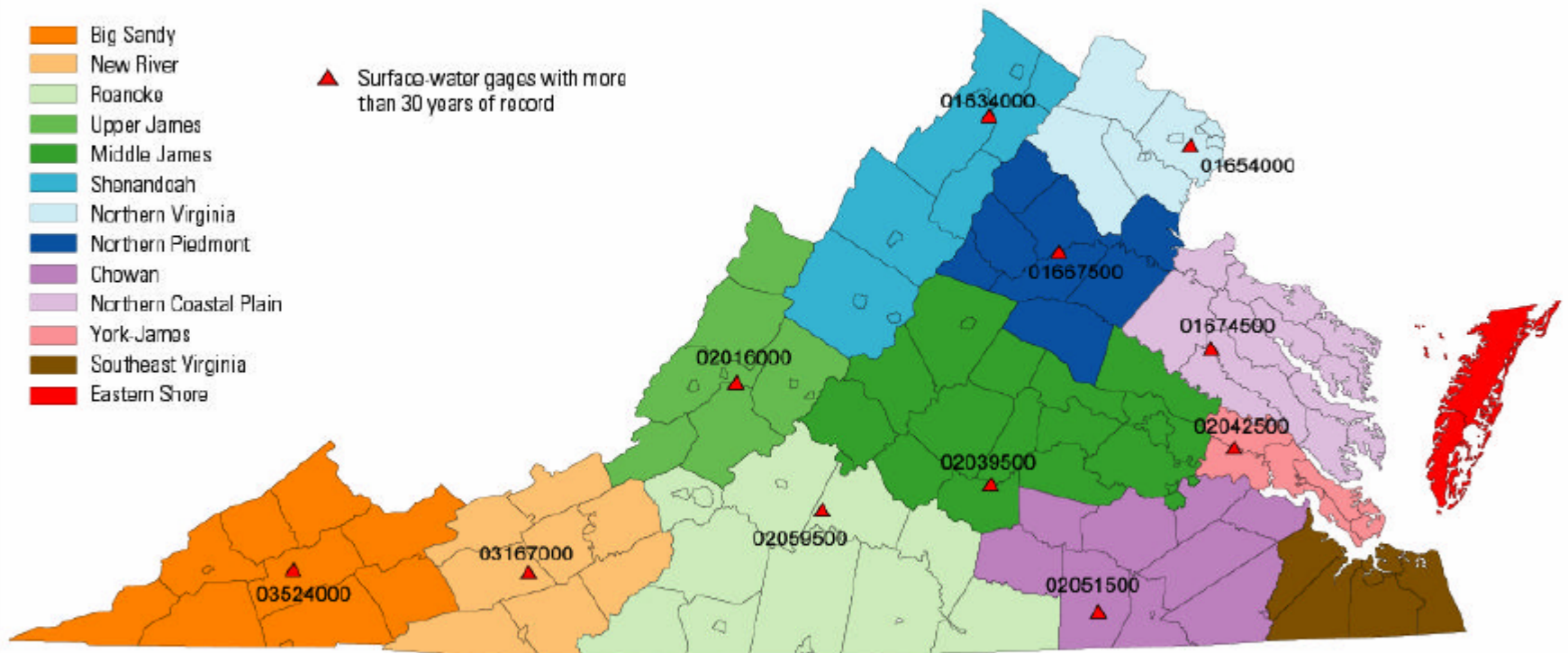
Streamflow

- Normal: $> 25^{\text{th}}$ percentile return flows
- Watch: 10^{th} to 25^{th} percentile return flows
- Warning: 5^{th} to 10^{th} percentile return flows
- Emergency: $< 5^{\text{th}}$ percentile return flows

State of Virginia

Drought Evaluation Regions

Surface-Water Drought Response Network



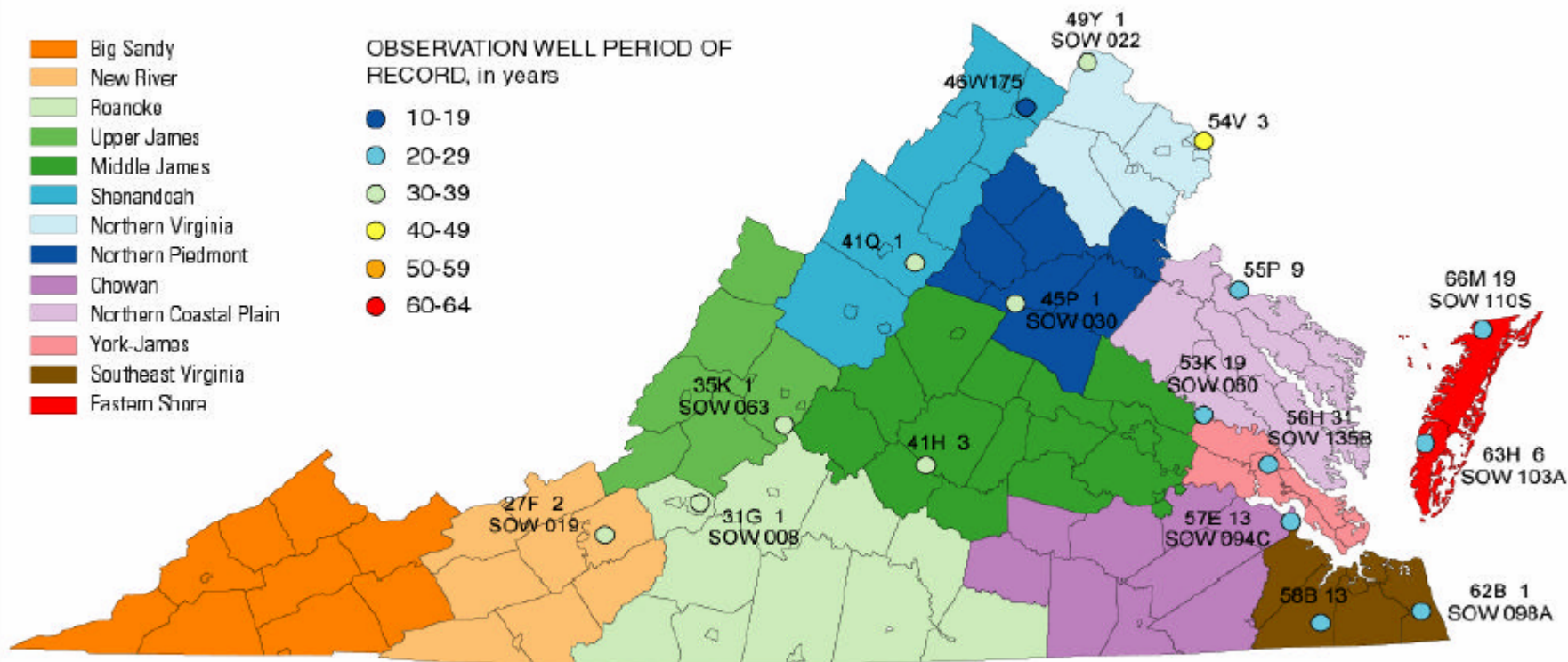
Ground Water Levels

- Normal: $> 25^{\text{th}}$ percentile return levels
- Watch: 10^{th} to 25^{th} percentile return levels
- Warning: 5^{th} to 10^{th} percentile return levels
- Emergency: $< 5^{\text{th}}$ percentile return levels

State of Virginia

Drought Evaluation Regions

Ground-Water Drought Response Network



Reservoir Storage

- Normal: > 120 days of usable storage
- Watch: 90 to 120 days of usable storage
- Warning: 60 to 90 days of usable storage
- Emergency: < 60 days of usable storage

Major Reservoir Conditions

	NORMAL	DROUGHT WATCH	DROUGHT WARNING	DROUGHT EMERGENCY
Smith Mountain Lake	>793 feet msl	793 to 791.5 feet msl	791.5 to 790 feet msl	< 790 feet msl
Lake Moomaw	>1565 feet msl	1565 to 1562.5 feet msl	1562.5 to 1560 feet msl	< 1560 feet msl
Lake Anna	> 248 feet msl	248 to 246 feet msl	246 to 244 feet msl	< 244 feet msl
Kerr Reservoir	< 3 feet below the guide curve	3 to 6 feet below the guide curve	> 6 feet below the guide curve	< 288 feet msl

Declaration of Drought Stages

- Normal: No more than one of the four indicators outside of normal range
- Drought Watch: At least two of the four indicators indicate drought watch conditions
- Drought Warning: At least two of the four indicators indicate drought warning conditions
- Drought Emergency: At least two of the four indicators indicate drought emergency conditions

General Responses to Drought

- Drought Watch: Efforts to raise public awareness that a significant drought event is likely
- Drought Warning: Efforts to raise public awareness that a significant drought event is imminent: Voluntary non-essential water use restrictions
- Drought Emergency: Inform public that a significant drought event exists: Mandatory non-essential water use restrictions

Mandatory Non-Essential Water Use Restrictions

- Unrestricted irrigation of lawns prohibited
- Unrestricted irrigation of golf courses prohibited
- Unrestricted irrigation of athletic fields prohibited
- Unrestricted washing of paved surfaces prohibited
- Unrestricted washing of automobiles, trucks, trailers and boats prohibited

Mandatory Non-Essential Water Use Restrictions (cont)

- Unrestricted operation of ornamental fountains, artificial waterfalls, misting machines, and reflecting pools prohibited
- Unrestricted use of water to fill and top off outdoor swimming pools prohibited
- Water may be served in restaurants only at the request of customers
- All other users asked to voluntarily reduce water use by 10%

Water Rationing

- **MAY** be required when mandatory non-essential water use restrictions are not sufficient to protect public welfare, safety and health
- Generally a decision of the locality or water purveyor made in consultation with State agencies
- VDEM is the POC and will coordinate the Commonwealth's response and assistance